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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,212	10/31/2003	Sunay Tripathi	20910/0206210-US0	1500
62663	7590	01/24/2008	EXAMINER	
Sun Microsystems, Inc.			TIV, BACKHEAN	
c/o DARBY & DARBY P.C.				
P.O. BOX 770			ART UNIT	PAPER NUMBER
Church Street Station			2151	
NEW YORK, NY 10008-0770			MAIL DATE	DELIVERY MODE
			01/24/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/698,212

**Applicant(s)**

TRIPATHI ET AL.

**Examiner**

Backhean Tiv

**Art Unit**

2151

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 November 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 11/07.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

***Detailed Action***

Claims 1-56 are pending in this application. This is a response to the Remarks/Amendments filed on 11/5/07. This action is made **FINAL**.

***Information Disclosure Statement***

The IDS filed on 11/5/07 has been considered.

***Drawings***

The Drawings filed on 11/5/07 are acceptable.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claims 1-56, recites "wherein determining whether to accept the transfer further comprises refusing the transfer of the network connection based at least in part on the state of the second network protocol stack/network interface card and the nature of the network connection", it is unclear whether the connection is being accepted or refused. The Office suggests, "wherein determining whether to refuse the transfer further comprises refusing the transfer of the network connection based at least in part on the state of the second network protocol stack/network interface card and the nature of the network connection".

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1,3,4,12,15,29,30,31,32,33,34,43 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1,3,4,14,15,30,38,46,47 of copending Application No. 10/698,168 in view of US Publication 2003/0204634 issued to Pinkerton et al. (Pinkerton). Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1,3,4,14,15,30,38,46,47 of copending Application No. 10/698,168 teaches all the limitations of claims 1,3,4,12,15,30,31,32,33,34,43. The difference between the present and co-pending application is that the copending application specifies what the two network protocol stacks are, one being a software network protocol stack and the other

being a hardware network protocol stack. The present application merely recites, "a first network protocol stack" and "a second network protocol stack".

Therefore it would have been obvious to one ordinary skill in the art at the time of the invention to use a specific type of network protocol stack, software and hardware, as taught by copending application 10/698,168 instead of, "a first network protocol stack" and "a second network protocol stack".

Co-pending application 10/698,168 does not explicitly teach determining whether to accept the transfer of the network connection at the second network protocol stack based at least in part on a state of the second network protocol stack and nature of the network connection, wherein determining whether to accept the transfer further comprises refusing the transfer of the network connection based at least in part on the state of the second network protocol stack and the nature of the network connection.

Pinkerton teaches determining whether to accept the transfer of the network connection at the second network protocol stack based at least in part on a state of the second network protocol stack and nature of the network connection, wherein determining whether to accept the transfer further comprises refusing the transfer of the network connection based at least in part on the state of the second network protocol stack and the nature of the network connection (Abstract, para.0047-0051,0054).

Therefore it would have been obvious to one ordinary skill in the art at the time of the invention to modify the teachings of copending application 10/698,168 to include accept the transfer of the network connection at the second network protocol stack/network interface card based at least in part on a state of the second network

protocol stack and nature of the network connection, wherein determining whether to accept the transfer further comprises refusing the transfer of the network connection based at least in part on the state of the second network protocol stack and the nature of the network connection as taught by Pinkerton in order to increase efficiency, speed, and/or throughput of a computer system(Pinkerton, para.0001).

One ordinary skill in the art would have been motivated to combine the teachings of copending application 10/698,168 and Pinkerton in order to increase efficiency, speed, and/or throughput of a computer system(Pinkerton, para.0001).

As per claim 29 of the present application, recites the two protocol stack as being an operating system and a network interface card. Claim 1 of copending application 10/698,168 teaches the two protocol stacks being software and hardware. An operating system is a form of software and a network interface card is a form of hardware as it is well known to one ordinary skill in the art at the time of the invention , therefore claim 1 of copending application 10/698,168 teaches all the limitations of claim 29.

Co-pending application 10/698,168 does not explicitly teach determining whether to accept the transfer of the network connection at the network interface card based at least in part on a state of the /network interface card and nature of the network connection, wherein determining whether to accept the transfer further comprises refusing the transfer of the network connection based at least in part on the state of the network interface card and the nature of the network connection.

Pinkerton teaches determining whether to accept the transfer of the network connection at the network interface card based at least in part on a state of the network

interface card and nature of the network connection, wherein determining whether to accept the transfer further comprises refusing the transfer of the network connection based at least in part on the state of the network interface card and the nature of the network connection(Abstract, para.0047-0051,0054).

Therefore it would have been obvious to one ordinary skill in the art at the time of the invention to modify the teachings of copending application 10/698,168 to include accept the transfer of the network connection at the network interface card based at least in part on a state of the network interface card and nature of the network connection, wherein determining whether to accept the transfer further comprises refusing the transfer of the network connection based at least in part on the state of the network interface card and the nature of the network connection as taught by Pinkerton in order to increase efficiency, speed, and/or throughput of a computer system(Pinkerton, para.0001).

One ordinary skill in the art would have been motivated to combine the teachings of copending application 10/698,168 and Pinkerton in order to increase efficiency, speed, and/or throughput of a computer system(Pinkerton, para.0001).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-24,27-52,55-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,697,868 issued to Craft et al(Craft) in view of US Publication 2003/0204634 issued to Pinkerton et al.(Pinkerton).

As per claims 1, 29, 30, 31, 32, Craft teaches a method of processing a network connection in a computer system(Abstract), comprising: establishing the network connection by an operating system of the computer system(col.3, lines 23-26); determining whether to offload the network connection from the operating system to a network interface card(Abstract, Figs.4-7); and transferring the network connection from the operating system to the network interface card when it is determined to offload the network connection from the operating system to the network interface card(col.5, lines 35-55, Figs.4-7).

Craft does not explicitly teach determining whether to accept the transfer of the network connection at the second network protocol stack/network interface card based at least in part on a state of the second network protocol stack/network interface card and nature of the network connection, wherein determining whether to accept the transfer further comprises refusing the transfer of the network connection based at least in part on the state of the second network protocol stack/network interface card and the nature of the network connection.



Pinkerton teaches determining whether to accept the transfer of the network connection at the second network protocol stack/network interface card based at least in part on a state of the second network protocol stack/network interface card and nature of the network connection, wherein determining whether to accept the transfer further comprises refusing the transfer of the network connection based at least in part on the state of the second network protocol stack/network interface card and the nature of the network connection(Abstract, para.0047-0051,0054).

Therefore it would have been obvious to one ordinary skill in the art at the time of the invention to modify the teachings of Craft to include accept the transfer of the network connection at the second network protocol stack/network interface card based at least in part on a state of the second network protocol stack/network interface card and nature of the network connection, wherein determining whether to accept the transfer further comprises refusing the transfer of the network connection based at least in part on the state of the second network protocol stack/network interface card and the nature of the network connection as taught by Pinkerton in order to increase efficiency, speed, and/or throughput of a computer system(Pinkerton, para.0001).

One ordinary skill in the art would have been motivated to combine the teachings of Craft and Pinkerton in order to increase efficiency, speed, and/or throughput of a computer system(Pinkerton, para.0001).

As per claim 2, the method as recited in claim 1, further comprising: sharing state information associated with the network connection between the first network protocol stack and the second network protocol stack(Craft, col.4, lines 16-40, Fig.2).

As per claim 3, the method as recited in claim 1, wherein determining whether to offload the network connection is performed by an operating system kernel of the computer system(Craft, Fig.2, col.5, lines 35-55).

As per claim 4, the method as recited in claim 3, wherein determining whether to offload the network connection is performed by a socket layer of the operating system kernel(Craft, Fig.2, col.5, lines 35-55).

As per claim 5, the method as recited in claim 1, wherein determining whether to offload the network connection is performed by the first network protocol stack(Craft, Fig.2, col.5, lines 35-55).

As per claims 6, 7,14,34,42, The method as recited in claim 1, wherein the first network protocol stack is implemented in software and the second network protocol stack is implemented in hardware(Craft, Abstract, Fig.2, col.5, lines 35-55).

As per claims 8,15, 35,43, the method as recited in claim 6, wherein the hardware is a TOE capable NIC(Craft, Abstract, col.3, lines 1-21).

As per claims 9, 36, wherein the second network protocol stack is capable of determining whether to offload the network connection back to the first network protocol stack(Craft, Fig.7, col.10, lines 10-30).

As per claims 10,37, further comprising: receiving an indicator from the second network protocol stack or a driver associated with the second network protocol stack, the indicator indicating a request to transfer the network connection back to the first network protocol stack(Craft, col.8, lines 30-57, Fig.7, col.10, lines 10-30).

As per claims 11,38, further comprising: obtaining state information for the network connection from the second network protocol stack or the driver associated with the second network protocol stack when the indicator is received; and handling the network connection by the first network protocol stack using the obtained state information(Craft, Fig.7, col.10, lines 10-30).

As per claim 12, the method as recited in claim 11, wherein obtaining state information is performed by a TCP layer of the first network protocol stack(col.10, lines 40-56).

As per claims 13,40, further comprising: obtaining at least one of unsent and undelivered data by the first network protocol stack from the second network protocol stack or a driver associated with the second network protocol stack, thereby enabling the first network protocol stack to process the unsent or undelivered data(Craft, Fig.7, col.10, lines 57-col.11, lines 47).

As per claims 16,44, wherein the network connection is a TCP connection(Craft, col.10, lines 40-56).

As per claims 17,45, further comprising: handling the network connection by the first network protocol stack when the network connection is offloaded back to the first network protocol stack from the second network protocol stack(Craft, Fig.7, col.10, lines 10-col.11, lines 47).

As per claims 18, 46, further comprising: handling the network connection by the first network protocol stack until it is determined to offload the network connection to the second network protocol stack(Craft, Fig.7, col.10, lines 10-col.11, lines 47).

As per claims 19,47, further comprising: handling the network connection by the first network protocol stack until it is determined to offload the network connection to the second network protocol stack(Craft, Abstract, col.3, lines 1-22).

As per claims 20,49, further comprising: providing state information associated with the first network protocol stack to the second network protocol stack when it is determined to offload the network connection from the first network protocol stack to the second network protocol stack(Craft, col.5, lines 55-col.6, line 41).

As per claim 21, the method as recited in claim 1, further comprising: establishing a mapping between a first set of state information for the network connection maintained by or associated with the first network protocol stack and a second set of state information for the network connection maintained by or associated with the second network protocol stack(Craft, col.5, lines 55-col.6, line 41, col.7, lines 31-52).

As per claim 22, the method as recited in claim 1, wherein transferring the network connection from the first network protocol stack to the second network protocol stack comprises: exchanging state information for the network connection between the first network protocol stack and the second network protocol stack(Craft, col.5, lines 55-col.6, lines7).

As per claim 23, the method as recited in claim 22, wherein exchanging state information comprises: exchanging a first identifier for the network connection maintained by the first network protocol stack with a second identifier for the network connection maintained by the second network protocol stack (Craft, col.7, lines 31-53).

As per claim 24,52, wherein the state information comprises IP addresses and ports for a client and server of the network connection, and at least one of send and receive sequence numbers of one or more packets for the network connection(Craft, claim 1, col.6, lines 7-15).

As per claims 27,55, wherein transferring the network connection from the first network protocol stack to the second network protocol stack comprises: initiating the transfer of the network connection by a socket layer of the computer system(Craft, col.6, lines 7-30).

As per claims 28,56, wherein upon transferring the network connection from the first network protocol stack to the second network protocol stack, the method further comprising: at least one of sending one or more packets by the second network protocol stack to the socket layer and receiving one or more packets by the second network protocol stack from the socket layer(Craft, col.5, lines 55-col.6, lines 41).

As per claim 33, the network device as recited in claim 32, wherein the first network protocol stack is a TCP/IP stack and the second network protocol stack is a TCP/IP stack(Craft, col.12, lines 6-20).

As per claim 39, the network device as recited in claim 38, wherein a TCP layer of the first network protocol stack is adapted for obtaining the state information for the network connection from the second network protocol stack or the driver associated with the second network protocol stack(Craft, col.5, lines 55-67, col.7, lines 31-53).

As per claim 41, the network device as recited in claim 38, wherein the indicator is received from the second network protocol stack or a driver associated with the second network protocol stack(Craft, col.7, lines 31-53).

As per claim 48, the network device as recited in claim 32, wherein the operating system is configured to establish a mapping between a first set of state information for the network connection associated with the first network protocol stack and a second set of state information for the network connection associated with the second network protocol stack(Craft, col.12, lines 6-45).

As per claim 50, the network device as recited in claim 32, wherein the operating system is configured to at least one of provide state information associated with the first network protocol stack and obtain state information associated with the second network protocol stack(Craft, col.12, lines 6-45).

As per claim 51, the network device as recited in claim 50, wherein the state information comprises an identifier for the network connection(Craft, col.6, lines 7-15).

Claims 25,26,53,54 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,697,868 issued to Craft et al(Craft) in view of US Publication 2003/0204634 issued to Pinkerton et al.(Pinkerton) in further view of US Patent 6,622,172 issued to Tam.

Craft in view of Pinkerton teaches all the limitations of claim 24 and 52, however does not explicitly teach as per claims 25,53, wherein the state information further comprises: a round trip estimate.

Tam teaches wherein the state information further comprises: a round trip estimate(col.10, lines 17-44).

Therefore it would have been obvious to one ordinary skill in the art at the time of the invention to modify the teachings of Craft in view of Pinkerton to include a round trip estimate as taught by Tam in order to avoid delays of transmission or congestion in a network(Tam, col.7, lines 17-31).

One ordinary skill in the art at the time of the invention would have been motivated to combine the teachings of Craft, Pinkerton, and Tam in order to provide a system to reduce bursty transmission of network connections between computers in a network(Tam, col.7, lines 27-30).

As per claims 26,54, wherein the state information further comprises: a congestion window and slow start information(Tam, col.7, lines 17-31). Motivation to combine set forth in claim 25.

### ***Response to Arguments***

The Office withdraws all previous rejections due to applicant's amendments/Remarks.

Applicant's arguments with respect to claims 1-56 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

**Examiner's Note:** Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in its entirety as potentially teaching of all or part of the claimed invention.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Backhean Tiv whose telephone number is (571) 272-5654. The examiner can normally be reached on M-F 6:30-3:00.



Application/Control Number:  
10/698,212  
Art Unit: 2151

Page 16

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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1/15/08

  
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